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### NEW AND IMPERFECTLY KNOWN NEOTROPICAL POLYBIINÆ (HYMENOPTERA, VESPIDÆ)

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#### Group of *Polybia incerta*

*Polybia incerta* Ducke, *P. procellosa* Zavattari, and *P. aequatorialis* Zavattari are small, slender species, with a narrow, depressed thorax, the eyes with a few scattered, short hairs, and the humeral margin of the pronotum with a distinct, though low carina. *P. dubitata* Ducke belongs to the same group, but appears to be only a color form of *P. procellosa*. These species have been separated thus far mainly on color, but this varies, the several color forms being sometimes homeochromic. The three species I recognize are very close, the reliable structural differences I was able to discover, being mentioned in the key. The drawings may help to appreciate them. The males are unknown.

1. First abdominal segment long and slender, the tergite nearly three times as long as wide at apex, seen from above. Thorax less than twice as long as wide, seen from above; pro-mesonotal suture nearly semi-circular; upper part of propodeum without median groove. Upper part of outer orbits and vertex separated from occiput by a fine carina ..... *P. aequatorialis*.  
First abdominal segment shorter, the tergite about two and a half times as long as wide at apex, seen from above. Propodeum with a shallow groove throughout. Vertex not separated from occiput by a carina .... 2.
2. Thorax moderately lengthened, less than twice as long as wide, seen from above; pro-mesonotal suture nearly semi-circular ..... *P. procellosa*.  
Thorax very long, about twice as long as wide, seen from above; pro-mesonotal suture decidedly semi-elliptical ..... *P. incerta*.

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*Polybia æquatorialis* Zavattari (1906) (Fig. 1 D)

*P. æquatorialis* is the best defined species of the group. It has a very short, though distinct oculo-malar space, lacking in the others. It varies from black and testaceous to completely black, with a few paler markings.

1. Typical form.—Zavattari described this as black, with the first two abdominal tergites and most of the sternites ferruginous or testaceous, margined with yellow, the legs yellowish-testaceous. Thorax with hind margin of pronotum, two dots on postscutellum, a line on mesopleura, and two spots on propodeum, yellow. Wings gray with yellowish tinge; tegulæ yellow. The type locality is Pun, in eastern Ecuador, a locality not found on any of my maps.

Specimens from COLOMBIA (Almaguer, 10,500 ft., Dept. Cauca; San Miguel, Dept. Cundinamarca) agree well with this, but in some the anterior margin of the postscutellum is completely yellow. Many others from ECUADOR (Baños, Tungurahua, 1000 to 1900 m.) differ only in having more extensive yellow markings on the thorax.

Ducke records this species from Bogotá, Colombia (2650 m.); but this is certainly an erroneous locality. No social wasp of the subfamily Polybiinæ has been actually taken at Bogotá or in the near vicinity; the nearest locality known to me for any species is *Fusugasuga*, at a much lower altitude.

2. *P. æquatorialis* var. (or subsp.) **nigricans**, new.

FEMALE OR WORKER.—Body black, without ferruginous or testaceous. Broad apical margin of clypeus, a streak at base of mandible, a spot in lower corner of frons, under side of scape, hind margin of pronotum, sometimes streaks or spots on scutellum and postscutellum, large spots on propodeum, a streak on mesopleura, tegulæ, and apical margins of most tergites and sternites, yellow. Legs testaceous-yellow. Wings grayish, with slight yellowish tinge, more infuscate in radial cell.

ECUADOR: Baños, Tungurahua, 1600 to 1900 m., female holotype and paratypes (W. Clarke-MacIntyre). Types at Mus. Comp. Zoöl., Cambridge, Mass.

3. *P. æquatorialis* var. (or subsp.) **tristis**, new.

FEMALE OR WORKER.—Black, the pale yellow markings reduced to narrow hind margin of pronotum, a dot on the base of the mandible, and narrow apical margins of tergite 1 and some of the sternites. Legs almost com-

pletely black. Tegulæ black. Wings strongly smoky, darker anteriorly and in radial cell, without yellowish tinge.

PANAMA: El Volcan, Chiriqui, 10,000 ft. female holotype and paratypes (D. W. Bishop). Types at Mus. Comp. Zoöl., Cambridge, Mass.

### *Polybia procellosa* Zavattari (1906) (Fig. 1 E-F)

1. Typical form.—As originally described, this is mostly ferruginous-brown, with the head, disk of mesonotum and scutellum black, and with very few yellowish or whitish markings; legs testaceous; wings tinged with yellowish. The type locality was San José, 1800 m., in eastern Ecuador.

I refer to this a series of specimens from Jutan Yacu, Rio Napo Watershed, 700 m., ECUADOR. Some of them agree well with the description, but others have the body more infuscated or have more yellow markings.

2. *P. procellosa* var. *dubitata* Ducke (1910). Originally described as a species, from the Amazon Basin, Brasil (Belem do Pará; Obidos; Tabatinga). I recognize it in a series of specimens from Kurupung, BRITISH GUIANA; and Satipo, 600 m., eastern PERU. These are black with few or very few yellowish or whitish markings; legs and tegulæ black; wings grayish without yellowish tinge.

Although these specimens differ conspicuously in color, I am unable to find a reliable structural difference between them and typical *procellosa*. Ducke mentions no structural characters to separate *procellosa* from *dubitata*.

### *Polybia incerta* Ducke (1907)

1. Typical form.—*P. incerta* was described as ferruginous-testaceous, with parts of head, mesonotum and hind part of abdomen more brownish, the apical margins of the segments discolored; legs testaceous-yellow. Wings hyaline, with testaceous veins.

A series of specimens taken by Dr. W. Weyrauch from a nest at Satipo, 600 m., PERU, agree well with this, except that there are a few yellowish markings blending more or less with the testaceous ground-color. The tegulæ are yellow.

2. *P. incerta* var. (or subsp.) *weyrauchi*, new (Fig. 1 A-C).

QUEEN AND WORKER.—Head moderately swollen, slightly wider than thorax; seen in front, slightly wider than high; seen from above, slightly over two and a half times as wide as long; occipital margin with a shallow inward curve. Outer orbits (genæ) and vertex not separated from occiput by a carina (sometimes a trace of a carina on middle of orbit); occipital face of head with a fine curved ridge, preceded by a groove, running above the occipital foramen and curving downward and outward at the sides where it

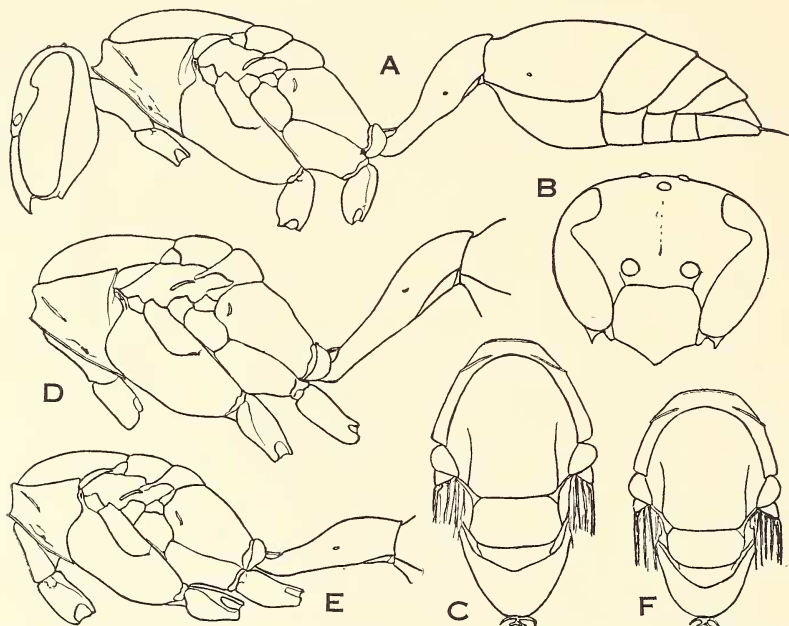


FIG. 1. A-C, *Polybia incerta* var. *weyrauchi* J. Bequaert, female holotype: A, body in profile; B, head in front view; C, thorax from above. D, *Polybia equatorialis* Zavattari, female: thorax and tergite 1 in profile. E-F, *Polybia procellosa* Zavattari, female: E, thorax and tergite 1 in profile; F, thorax from above.

stops near the edge at lower third of outer orbit. Oculo-malar space practically absent; mandibular condyle almost touching eye. Outer orbit well developed, in profile nearly as wide as eye and somewhat swollen in upper corner. Inner orbits much farther apart on vertex than at clypeus. Ocelli large, close together, in an almost equilateral triangle; posterior ocelli three times as far from eyes as from each other. Antennæ about twice as far apart as from eyes; interantennal area slightly and evenly convex, with an upper concavity bearing a deep elongate pit; upper half of frons slightly

swollen on either side of anterior ocellus. Clypeus about as wide as long, pentagonal with upper side longest and lateral sides slightly longer than lower sides; contiguous with eyes over about two-thirds of sides; anterior margin moderately produced, broadly rounded off at apex. Mandibles about two and a half times as long as wide at base, with subparallel sides; outer surface slightly convex over apical half, flattened over basal half; cutting edge slightly oblique, with four teeth, the upper one very short and blunt, the three lower ones acute and subequal. Antenna: scape slender, slightly curved, about six times as long as thick (seen in profile), about as long as the following four segments together; third segment two and one-third times as long as wide at apex, as long as fourth and fifth together; fourth longer than wide; fifth and sixth about as long as wide; seventh to eleventh distinctly wider than long; twelfth longer than wide at base; flagellum slightly and very gradually swollen apicad of fourth segment. Thorax unusually long and depressed, nearly twice as long as high in profile; seen from above, elongate-elliptical, much narrowed anteriorly; dorsal areas of pronotum extremely narrowed; humeral margin with a strongly curved carina, distinct at the sides where it ends without projecting angles, effaced medially; pleura as usual in *Polybia*; mesonotum much longer than wide, flattened over posterior half; pro-mesonotal suture semi-elliptical; scutellum about one and a half times as wide as long, flat; postscutellum longer than usual; propodeum much narrowed posteriorly, with a distinct, narrow, groove-like concavity. Abdomen similar to that of *Polybia occidentalis*. First segment much narrowed, seen from above with the basal half narrower, ribbon-shaped, rather suddenly widened into the slightly swollen and gradually expanding apical half; spiracles barely projecting, placed about midway. Legs slender; coxæ long, flattened; mid tibiae with two spurs; claws symmetrical. Wings lengthened; venation as usual.

Dull; body densely covered with microscopic, granular or coriaceous punctures, except over lower half of clypeus and parts of propodeum, which are shiny; no larger punctures visible with a hand-lens, except a few over apical half of clypeus, mandibles and lower portion of outer orbits. Erect pubescence very short, grayish, somewhat longer on propodeum; sides of thorax and propodeum with a slight silvery sheen. Eyes with a few, scattered, short hairs.

Black. A dot at base of mandible, middle of hind margin of pronotum, narrow apical margins of tergite 1 or of some of the next tergites also, and broader apical margins of sternites 2 to 5, whitish. Tibial spurs and claws testaceous. Tegulae black. Wings very slightly smoky, somewhat darker anteriorly; radial cell and adjoining area of third and fourth cubital cells infusate and somewhat purplish. Veins and stigma blackish-brown.

Length (h. + th. + t. 1 + 2): 7.8 to 8.5 mm.; of fore wing, 8 to 9 mm.

PERU: Oxapampa, female holotype and many paratypes from a nest, at 1800 m. altitude; also 2 female paratypes, flying at 1200 m. (W. Weyrauch). I have also two female paratypes from

an old collection labelled merely "Peru." Holotype and paratypes at Mus. Comp. Zoöl., Cambridge, Mass.; paratypes at U. S. Nat. Mus., Amer. Mus. Nat. Hist., Ac. Nat. Sci. Phila., etc.

The nest will be described by Dr. Weyrauch.

Although the color is very distinctive, I was unable to find structural differences between this new form and *P. incerta*, so that I am forced to regard it as a melanistic race of that species. I have, however, described it in detail for the convenience of future workers.

#### *Polybia nigratella* R. du Buysson (1905)

This was originally described, as *Polybia occidentalis* var. *nigratella*, from Oaxaca, Mexico. Ducke pointed out that it could not be a form of *Polybia occidentalis* and suggested that it might have been his *P. dubitata*. I believe, however, that I have recognized it in a series of females or workers which I took at Chitzen Itza, YUCATAN, from one nest. These look superficially like unusually sturdy *P. occidentalis*; but the humeral margin of the pronotum bears a distinct, though low carina on the sides, the vertex is not separated by a carina from the occiput, and the sides of the thorax show distinct small punctations scattered in the dense, microscopic sculpture. These specimens also resemble *P. procellosa* var. *dubitata*, which, however, differs in the more slender thorax, flattened above, and the lack of distinct larger punctures on mesopleura. The eyes of *P. nigratella* bear a few short, scattered hairs.

#### *Polybia bifasciata* H. de Saussure (1854)

Although *P. bifasciata* is one of the rarer species of *Polybia*, it occurs in a number of color forms which appear worthy of distinct names. The following key will separate them.

1. Wings strongly tinged with amber-yellow; veins and stigma pale russet; radial cell and tip of wing mostly infusate ..... 2.  
 Wings nearly hyaline, without yellowish tinge; veins and stigma blackish-brown; radial cell and tip of wing mostly infusate ..... 3.
2. Abdomen extensively fulvous-orange, without distinct apical pale yellow fasciæ. Thorax spotted with orange-yellow ..... var. *restrepoensis*.  
 Body black, without fulvous-orange. Abdominal segment with pale yellow apical fasciæ. Thorax with a very few or no pale markings ..... var. *mellipennis*.

3. Base of second tergite with pale yellowish spots on the sides; apical margins of most tergites and sternites and markings of thorax pale yellow ..... var. *cordata*.  
 Base of second tergite black, without yellow or brownish markings ..... 4.
4. Tergites and sternites 4 to 6 mostly orange-yellow. Remainder of abdomen and thorax black ..... var. *xanthopyga*.  
 Apical segments not mostly orange-yellow ..... 5.
5. First 3 to 5 abdominal tergites and some of the sternites with yellowish hind margins. Thorax with several yellowish markings.  
 ..... var. *quadricincta*.  
 Only first or first and second tergites and some of the sternites with yellowish-white hind margins, or abdomen entirely black ..... 6.
6. Thorax and abdomen entirely or almost entirely black; at most a very narrow apical whitish margin on first tergite and on some of the sternites ..... var. *heydeniana*.  
 Thorax and abdomen more distinctly marked with yellowish; both first and second tergites and some of the sternites with an apical fascia.  
 ..... typical *bifasciata*.

1. Typical form: *Polybia bifasciata* H. de Saussure, 1854, Et. Fam. Vesp., II, p. 172, Pl. XXII, fig. 3 (♀). Originally described from Brasil. I have seen it from BRITISH GUIANA (Kartabo) and eastern PERU (San Ramon, Valle Chanchamayo, 800 m.; Tingo Maria, Rio Huallaga, 700 m.).

2. *P. bifasciata* var. *heydeniana* de Saussure: *Polybia heydeniana* H. de Saussure, 1863, Mém. Soc. Phys. Hist. Nat. Genève, XVII, pt. 1, p. 241 (♀). Originally described from Brasil, without more definite locality. I have seen it from BRASIL (São Paulo, Capital), PERU (Iquitos; Oxapampa, 1100 m.; Tingo Maria, Rio Huallaga, 700 m.), COLOMBIA (Muzo, Dept. Boyacá, 900 m.), and PANAMA (Barro Colorado Id.).

*Polybia theresiana* W. A. Schulz (1904, Berlin. Ent. Zeitschr., XLVIII, (1903), pt. 4, p. 257; ♀; between Bodega and Honda, Rio Magdalena, Colombia), I regard as a form of *P. bifasciata* and identical with the var. *heydeniana*.

Transitional specimens connect typical *bifasciata* and var. *heydeniana*.

3. *P. bifasciata* var. *quadricincta* de Saussure: *Polybia quadricincta* H. de Saussure, 1854, Et. Fam. Vesp., II, p. 173 (♀). Originally described from "America," it is the most common form of the species. I have seen it from BRITISH GUIANA (Bartica; Kartabo; source of the Essequibo River; Wanaina, N.W.

District), FRENCH GUIANA (Saint-Jean), TRINIDAD, VENEZUELA (Mt. Duida), COLOMBIA (Restrepo), eastern PERU (San Ramon, Valle Chanchamayo, 800 m.), and BOLIVIA (San Fernando Rapids; Huachi, Rio Beni; Rurrenabaque, Rio Beni).

4. *P. bifasciata* var. *cordata* F. Smith: *Polybia cordata* F. Smith, 1857, Cat. Hym. Brit. Mus., V, p. 129 (♀). Described from the Amazon River, Brasil. I have not seen it. According to the description it has basal pale spots on the second tergite, connected with the lateral extensions of the apical fascia; while the wings are hyaline with a dark fuscous spot in the costal and radial cells.

5. *P. bifasciata* var. (or subsp.) **xanthopyga**, new.

FEMALE OR WORKER.—Head black; mandibles with a yellowish basal dot. Thorax black. Abdomen black; tergites 4 to 6 and sternites 3 to 6 almost entirely orange-yellow. Legs and antennæ black. Wings as in typical *P. bifasciata*.

COLOMBIA: Villavicencio, Int. del Meta, 450 m., female holotype (J. Bequaert).—PERU: Oxapampa, female paratype (W. Weyrauch).—Types at Mus. Comp. Zoöl., Cambridge, Mass.

6. *P. bifasciata* var. (or subsp.) **restrepoensis**, new.

FEMALE OR WORKER.—Head black; a yellowish basal dot on mandibles. Thorax black, with the following yellowish markings; humeral and hind margins of pronotum; a vertical streak in upper inner corner of mesepisternum; spots on tegulæ and extreme anterior corners of scutellum; anterior margin of postscutellum; two spots on propodeum. Legs black. Abdomen black and orange-yellow; in the holotype from Colombia the orange covers the hind margins of the tergites and sternites and most of the second tergite (except for an irregular transverse black area in posterior half); in some paratypes of Peru, the abdomen is almost completely orange (except for the base of the first and the entire sixth tergite); all transitions occur between these two extremes; in a paratype from Colombia the second tergite is much more extensively black than usual. Wings mostly subhyaline, with a very strong honey-yellow tinge, particularly toward the costa; veins and stigma mostly russet-yellow; radial cell and apex of wing infusate, violaceous.

MALE.—Head and thorax more profusely marked with yellow, particularly on the clypeus and under side of scape. Fore coxæ mostly yellow. Abdomen mostly orange-yellow. Wings as in female.

COLOMBIA: Restrepo, Int. del Meta, 500 m., female holotype and female paratype (J. Bequaert).—PERU: San Ramon, Valle Chanchamayo, 900 m., many female paratypes, male allotype and six male paratypes, all from one nest; and one female paratype caught drinking at edge of stream (W. Weyrauch); Oxapampa,



1200 m., female paratypes from one nest (W. Weyrauch).—Types at Mus. Comp. Zoöl., Cambridge, Mass.

*P. bifasciata* var. *restrepoensis* is homeochromic with the typical color form of *Polybia rejecta* (Fabricius), from which it is readily told by the low humeral carina of the pronotum, the shorter thorax and the much shorter first abdominal segment.

The specimens from San Ramon and Oxapampa were obtained from mixed colonies. Of the 97 wasps sent from the San Ramon nest, 75 females and 7 males are of the var. *restrepoensis*, 13 females and 2 males of the var. *mellipennis*. Only four females from the Oxapampa nest were received, 2 of them var. *restrepoensis*, 1 var. *heydeniana* and 1 var. *xanthopyga*. In either case transitional specimens were absent. A possible explanation is that these colonies were started each by several fertile and impregnated queens belonging to different color forms, their offspring remaining distinct. No doubt the workers or females of all forms shared in the maintenance and feeding of the colony. Yet this case might illustrate one of the ways in which social parasitism originated.

7. *P. bifasciata* var. (or subsp.) ***mellipennis***, new.

FEMALE OF WORKER.—Head black. Thorax black, with at most hind margin of pronotum narrowly whitish-yellow. Legs black. Abdomen black; apical margins of first to fifth tergites and second to fifth sternites narrowly whitish-yellow. Wings as in var. *restrepoensis*, extensively suffused with honey-yellow. Some specimens lack yellowish margins on some of the tergites.

MALE.—Differs from the female only in having the underside of scape and a spot on each lower corner of frons yellowish; the clypeus is black.

PERU: San Ramon, Valle Chanchamayo, 900 m., female holotype, male allotype and several paratypes of both sexes, taken from one nest, together with many specimens of both sexes of the var. *restrepoensis* (W. Weyrauch); also a few at flowers of coffee trees. Types at Mus. of Comp. Zoöl., Cambridge, Mass.

This form combines the yellowish wings of var. *restrepoensis* with the body markings of var. *quadricincta*, although the thorax is much blacker than in the latter.

***Brachygastra bilineolata* Spinola, 1841<sup>1</sup>**

The following key separates the color forms of this species.

1. Second abdominal tergite with only the apical margin yellow. Mesonotum

<sup>1</sup> The older generic name *Brachygastra* is here used for *Nectarina*.

- with short yellow longitudinal stripes, or with a pair of yellow spots posteriorly, or entirely black. Wings with a honey-yellow tinge, most of the veins testaceous .....typical *bilineolata*.
- Second abdominal tergite with a broad or narrow discal yellow band in addition to the apical fascia, or mostly yellow. Mesonotum always with two long yellow stripes ..... 2.
2. Second abdominal tergite mostly yellow, except for the black base and a more or less defined transverse black discal blotch or irregular line. Wings with a honey-yellow tinge .....var. *surinamensis*.
- Second abdominal tergite with two separated transverse yellow stripes of about equal width, one apical, the other discal ..... 3.
3. Thorax very extensively yellow, the propodeum mostly of that color. Wings nearly hyaline, not tinged with yellow .....var. *propodealis*.
- Thorax less extensively yellow, the propodeum black ..... 4.
4. Wings extensively tinged with honey-yellow. Veins and stigma mostly pale .....var. *antillarum*.
- Wings nearly hyaline, slightly grayish, not suffused with yellow; veins and stigma blackish .....var. *smithii*.

1. Typical form: *Brachygastra bilineolata* Spinola, 1841, Ann. Soc. Ent. France, X, p. 126 (♀; Cayenne, French Guiana). According to the original description, the second tergite had only the apical margin yellow, while the mesonotum had two longitudinal yellow lines. H. de Saussure saw Spinola's types and his description and figure (1854, Et. Fam. Vesp., II, p. 228, Pl. XXXIV, fig. 2) agree with this. I am unable to separate, even as a variety, *Nectarinia möbiana* H. de Saussure, 1867, Reise der Novara, Zool., II, pt. 1, Hym., p. 22 (♀; Surinam). This is described as lacking the discal yellow cross-band on tergite 2, but having in addition an entirely black mesonotum. Of the specimens without discal band on tergite 2 before me, some have the mesonotum black, others have a pair of triangular yellow spots before the scutellum, and some have short yellow lines (or traces of them) over part of the mesonotum. *Brachygastra dorso-lineata* Spinola (1841, *Op. cit.*, p. 123) was a clerical error for "*bilineolata*," hence also a synonym of the typical form.

I have seen the typical form from BRITISH GUIANA (Georgetown; Demerara), VENEZUELA (Guanta), BRASIL (Sa. Catharina; Chapada), COLOMBIA (Villavicencio), and COSTA RICA (San José).

2. *B. bilineolata* var. *antillarum* (Provancher): *Odynerus antillarum* Provancher, 1888, Additions Faune Canada, Hymén.,

p. 420 (♀; Trinidad). Provancher's description leaves no doubt as to the identity of his wasp. He mentions the smooth clypeus, rounded off anteriorly, the peculiar shape of the first and second abdominal segments and of the propodeum, the puncturation of the thorax and the characteristic color pattern. The two longitudinal streaks on the mesonotum, the discal fascia of the second segment and the wings yellowish near the costa mark it as the most common form of *N. bilineolata*, for which no other published name is available. Furthermore, it is common in Trinidad, and the only form of the species I have seen from there.

The var. *antillarum* is found in BRITISH GUIANA (Rupununi River), DUTCH GUIANA (Paramaribo), TRINIDAD (Mayaro Bay), BRASIL (Vista Alegre on the Rio Branco), eastern PERU (Iquitos; Lower Rio Napo), and the REPUBLIC OF HONDURAS (Tegucigalpa).

3. *B. bilineolata* var. *smithii* (de Saussure): *Nectarinia smithii* H. de Saussure, 1854, Et. Fam. Vesp., II, p. 229, Pl. XXXI, fig. 8 (♀). Originally described from Santarem, Brasil. I have seen it from COLOMBIA (Rio Frio, Dept. Magdalena; Puerto Olaya, Dept. Santander; Muzo, Dept. Boyacá), FRENCH GUIANA (Nouveau-Chantier), and BRASIL (Carvoeiro, junction of Rio Negro and Rio Branco; Flores near Manaus). It is somewhat less silky than the var. *antillarum*. *Caba bilineolata* var. *fasciata* R. v. Ihering (1904, Rev. Mus. Paulista, VI, pp. 106 and 112), described from Surinam and Brasil (Rio Juruá), is a synonym of *smithii*.

4. *B. bilineolata* var. (or subsp.) **propodealis**, new.

FEMALE OR WORKER.—Head black, with most of clypeus (except a median brown spot), very broad outer and inner orbits connected with a broad cross-band on vertex, and a large interantennal spot on frons, yellow. Thorax black, with dorsal face of pronotum, two broad longitudinal stripes on mesonotum (fused behind), scutellum (except for a transverse black streak), postscutellum, most of concavity and lateral ridges of propodeum, and a streak in upper half of mesepisternum, yellow. Legs black, with under side of fore coxæ and more or less of under side of all femora, yellow. Abdomen black, with broad apical margins of all tergites and sternites, a broad transverse fascia on disk of second tergite (not connected with apical margin) and large discal spots on sides of second sternite, yellow. Wings subhyaline, without yellowish tinge; veins and stigma blackish-brown.

PERU: Middle Rio Marañon, female holotype. Mus. of Comp. Zoöl., Cambridge, Mass.

5. *B. bilineolata* var. (or subsp.) *surinamensis*, new.

FEMALE OR WORKER.—Head and thorax black, with many yellow markings, as in var. *antillarum*; concavity of propodeum black. Legs black. Abdomen black, with broad yellow apical margins on all tergites and sternites; second tergite mostly yellow, except for the black base and sometimes for a narrow or ill-defined discal blackish-brown blotch or cross-streak; but the yellow of the disk is always connected with the apical margin, at least at the sides. Wings as in var. *antillarum*, extensively tinged with honey-yellow; most of veins and stigma testaceous.

DUTCH GUIANA (or Surinam), without more definite locality, female holotype and paratypes. Mus. of Comp. Zoöl., Cambridge, Mass.

***Brachygastra scutellaris* (Fabricius, 1804)**

The color forms of this species may be separated as follows.

1. Scutellum black; postscutellum black with an anterior pale cross-band (sometimes almost lacking) ..... 2.  
Scutellum and postscutellum mostly or entirely yellow ..... 3.
2. Pale markings of abdomen reduced to narrow whitish apical margins on second and third sternites. Wings extensively smoky anteriorly and near base ..... var. *colombiensis*.  
Pale apical (whitish) margins on most sternites and some tergites. Wings slightly grayish or somewhat smoky anteriorly and toward base.  
var. *myersi*
3. Pale color almost restricted to scutellum and postscutellum; usually only some sternites and first tergite of abdomen with narrow pale apical margins. Wing with costal and subcostal cells conspicuously smoky.  
var. *gribodoi*.  
Pale color much more extensive on thorax and abdomen ..... 4.
4. Second abdominal tergite mostly orange-yellow or ferruginous. Thorax extensively marked with yellow; mesonotum usually with spots or stripes ..... var. *rufiventris*.  
Second abdominal tergite with only an apical yellow margin ..... 5.
5. Yellow of pronotum almost absent or restricted to the narrow, often incomplete humeral margin. Apical margins of abdominal segments narrow, whitish-yellow ..... typical *scutellaris*.  
Yellow extending over most of pronotum. Apical margins of abdominal segments wide, orange-yellow ..... var. *annectens*.

1. Typical form: *Vespa scutellaris* Fabricius, 1804, Syst. Piezat., p. 265. Described from "South America" as follows: "V. atra, scutello flavo, abdominis segmentis margine flavis. Statura parva *V. nidulans*. Caput cum antennis atrum: fascia sub antennis argenteo villosa. Thorax punctatus ater scutello

fulvo, immaculato. Abdomen segmentorum marginibus flavis: segmento secundo maximo. Alæ albæ, costa nigra. Pedes atrii." This description only fits the typical form as characterized in my key. It is true that only the scutellum is said to be yellow, whereas all specimens I have seen have the postscutellum also at least partly yellow; but on the insect seen from above the postscutellum is completely hidden from view. Of *Brachygastra scutellata* Spinola (1851, Mem. Ac. Sci. Torino, Sci. Fis. Mat., (2) XIII, p. 74), the main form and var. A, described from "Brasil," were typical *scutellaris*; but the var. B, from Para, was var. *rufiventris* de Saussure.

Typical *B. scutellaris* is the most common form of the species. I have seen it from PANAMA (Cabima), BRITISH GUIANA (Forest Settlement, Mazaruni River; Kartabo; junction of Mazaruni and Essequibo Rivers), FRENCH GUIANA (Nouveau Chantier; Saint-Jean-du-Maroni), and BOLIVIA (Huachi, Rio Beni; Blancaflor, Rio Beni; near mouth of Rio Mapiri). It is also reported from Brasil (as far south as São Paulo), eastern Peru (Iquitos; Marcapata) and Colombia.

2. *B. scutellaris* var. (or subsp.) **annectens**, new.

FEMALE OR WORKER.—Head black, with broad apical margin of clypeus, a spot in each lower corner of frons, an elongate spot on upper outer orbit (sometimes lacking), and two oblique lines on vertex (more or less connected), yellow. Thorax black, with most of dorsal face of pronotum, tegulæ, posttegulæ, scutellum and postscutellum yellow. Legs black. Abdomen black, with broad apical yellow margins on tergites and sternites 2 to 5 and a narrow one on tergite 1. Wings nearly hyaline, somewhat infuscated toward costal margin.

COLOMBIA: MUZO, Dept. Boyacá, 900 m., female holotype and paratype (J. Bequaert). Types at Mus. Comp. Zoöl., Cambridge, Mass.

3. *B. scutellaris* var. *rufiventris* de Saussure: *Nectarinia rufiventris* H. de Saussure, 1854, Et. Fam. Vesp., II, p. 226 (♀). Originally described from Pará, Brasil. I have seen it from COLOMBIA (Muzo, Dept. Boyacá, some at flowers of *Mikania scandens*). The orange-fulvous second tergite is sometimes blotched with black. R. du Buysson reports it from French Guiana (Cayenne).

4. *B. scutellaris* var. *gribodoi* R. du Buysson: *Nectarina scu-*

*tellata* var. *gribodoi* R. du Buysson, 1905, Ann. Soc. Ent. France, LXXIV, p. 549 (♀ ♂). This is *Brachygastra scutellaris* Perty, 1833, Delectus Anim. Articuli. Brasil., p. 146 ("tota nigra, alis fuliginosis, scutello flavo"). Recorded thus far from eastern Peru (Pevas; Iquitos). I have seen it from PERU (Tingo Maria, Rio Huallaga, 700 m.) and COLOMBIA (Restrepo, Int. del Meta, 500 m.).

5. *B. scutellaris* var. (or subsp.) **myersi**, new.

FEMALE OR WORKER.—Head black, with a yellowish spot in each lower corner of frons. Thorax black, with anterior (or upper) half or less of postscutellum pale yellow. Legs black. Abdomen black, with narrow or incomplete whitish apical margins on all or some tergites and sternites. Wings subhyaline, more or less grayish or rather extensively infuscated anteriorly and toward base.

BRITISH GUIANA: Mt. Roraima, female holotype and 5 female paratypes (J. G. Myers).—BOLIVIA: Cavinassas, Rio Beni, female paratype (W. M. Mann). Holotype and paratypes at Mus. Comp. Zoöl., Cambridge, Mass.; paratype from Bolivia at U. S. Nat. Mus.

6. *B. scutellaris* var. (or subsp.) **colombiensis**, new.

FEMALE OR WORKER.—Black, except for a small whitish spot in each lower corner of frons, narrow anterior (or upper) yellowish margin of postscutellum (sometimes barely indicated), and very narrow whitish apical margins on sternites 2 and 3. Wings smoky, strongly infuscated over costal half and near base.

COLOMBIA: Restrepo, Int. del Meta, 500 m., female holotype and 4 female paratypes (J. Bequaert). Types at Mus. Comp. Zoöl., Cambridge, Mass.

This is evidently the variety with black scutellum and postscutellum, from Colombia, mentioned by Ducke (1910, Ann. Mus. Nat. Hungarici, VIII, p. 479).